Additional file 2: Table S2. Dataset of the esterase and lipase activity assays in individual midguts of *Culex quinquefasciatus* early fourth instar larvae from a susceptible and a Bin-resistant strain, using five substrates. Lipase activity (A; mU/midgut). Protein (P; µg/midgut). Specific Activity (SA; U/g protein).

Susceptible

	Acetate			Butyrate			Heptanoate			Palmitate			Oleate		
N	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**
1	7.446	11.192	665.341	4.775	20.489	233.073	2.475	19.842	124.717	0.062	33.316	1.856	0.047	7.608	6.194
2	7.128	15.711	453.707	4.068	17.048	238.635	2.951	19.325	152.692	0.122	37.712	3.226	0.034	3.892	8.677
3	7.767	34.920	222.436	4.491	18.318	245.188	2.999	19.653	152.580	0.036	31.386	1.137	0.023	4.477	5.185
4	8.857	9.996	886.076	4.632	17.055	271.606	2.723	14.487	187.957	0.049	32.791	1.500	0.022	2.019	11.099
5	8.049	15.780	510.099	5.126	21.921	233.836	3.180	21.725	146.366	0.091	18.487	4.907	0.025	6.988	3.525
6	7.914	21.643	365.650	4.676	18.502	252.739	3.288	7.984	411.777	0.077	20.006	3.845	0.020	7.465	2.622
7	6.739	12.721	529.762	4.606	18.460	249.504	4.457	26.267	169.697	0.088	22.367	3.946	0.014	0.862	16.665
8	6.364	18.029	353.004	4.671	30.407	153.604	3.404	23.503	144.844	0.084	54.136	1.549	0.019	7.433	2.512
9	6.629	10.724	618.180	3.945	24.864	158.647	3.644	22.038	165.370	0.089	52.623	1.696	0.028	17.724	1.584
10	7.405	16.716	443.003	3.837	15.712	244.195	3.906	38.035	102.687	0.088	24.117	3.645	0.073	11.395	6.433
11	6.676	14.025	476.022	3.982	20.028	198.803	3.169	51.471	61.573	0.097	20.197	4.807	0.069	26.155	2.655
12	7.031	16.629	422.795	4.786	9.631	496.896	3.881	17.698	219.272	3.078	20.981	0.927	0.050	11.775	4.246
13	6.568	12.218	537.567	3.078	17.513	223.210	3.078	16.229	189.632	3.276	12.739	1.356	0.067	18.303	3.659
14	5.394	22.523	239.503	3.276	25.295	115.855	3.276	26.730	122.561	2.949	21.588	0.722	0.017	20.915	0.808
15	5.544	22.902	242.071	2.949	27.079	127.067	2.949	17.259	170.852	2.907	26.857	0.593	0.066	17.626	3.739
16	5.593	17.763	314.861	2.907	26.429	130.271	2.907	20.225	143.717	3.012	23.140	0.811	0.044	21.927	2.012
17	6.712	22.957	292.366	3.012	20.511	183.190	3.012	20.097	149.892	3.281	25.432	0.691	0.027	19.693	1.364
18	6.318	59.457	106.263	3.281	16.722	206.788	3.281	29.750	110.284	2.893	27.406	0.548	0.031	20.430	1.528
19	6.216	24.446	254.278	2.893	22.564	169.359	2.893	18.149	159.399	3.160	19.602	0.862	0.009	17.140	0.549
20	5.048	24.455	206.438	3.160	25.644	148.620	3.160	19.184	164.711	2.822	21.412	0.810	0.007	15.843	0.437
21	6.134	42.246	145.197	2.822	21.299	148.896	2.822	43.192	65.347	3.304	12.838	1.432	0.011	26.275	0.433
22	6.183	25.515	242.313	3.304	19.610	201.954	3.304	22.825	144.736	3.159	37.810	0.451	0.009	11.178	0.769

23	5.891	30.955	190.304	3.159	21.256	193.440	3.159	22.553	140.085	2.896	23.247	0.756	0.031	15.716	1.966
24	6.130	16.111	380.452	2.896	17.087	218.317	2.896	36.637	79.043	0.011	21.632	0.495	0.020	14.935	1.371
25	5.750	14.499	396.619	3.848	13.789	279.078	3.311	16.928	195.562	0.007	14.742	0.473	0.033	6.948	4.787
26	7.212	22.105	326.249	3.847	7.319	525.646	2.834	13.767	205.872	0.009	12.481	0.736	0.009	18.978	0.455
27	7.453	11.313	658.796	4.518	11.436	395.073	2.900	15.860	182.819	0.007	14.811	0.482	0.008	26.194	0.297
28	7.269	15.911	456.861	4.789	16.789	285.270	2.730	10.713	254.870	0.007	19.791	0.346	0.009	17.133	0.553
29	6.981	13.803	505.746	4.740	7.712	614.631	2.706	10.579	255.795	0.007	9.093	0.754	0.010	27.370	0.359
30	5.662	10.626	532.871	4.557	16.476	276.595	2.507	7.117	352.255	0.007	19.795	0.344	0.062	18.504	3.328
31	5.586	11.566	482.988	4.530	7.309	619.869	2.567	4.562	562.754	0.006	8.454	0.673	0.034	17.101	1.990
32	6.912	12.368	558.890	4.601	10.871	423.208	2.629	5.854	449.016	0.009	11.918	0.751	0.031	35.679	0.858
33	6.994	12.926	541.054	4.434	12.137	365.313	2.705	7.246	373.311	0.011	11.846	0.906	0.062	35.987	1.723
34	6.007	14.092	426.264	4.604	10.575	435.385	3.200	12.035	265.879	0.011	11.428	0.946	0.095	30.192	3.162
35	6.558	16.622	394.552	4.701	14.144	332.331	3.160	17.946	176.096	0.010	11.874	0.840	0.042	25.593	1.640
36	7.480	20.536	364.265	4.697	20.584	228.203	3.483	17.760	196.102	0.007	15.848	0.466	0.085	8.835	9.585
37	7.481	41.105	181.987	4.680	22.598	207.085	2.644	20.810	127.057	0.006	28.315	0.195	0.063	22.170	2.853
38	7.351	24.310	302.399	4.984	25.369	196.464	2.868	27.804	103.138	0.007	9.846	0.759	0.054	17.062	3.175
39	7.209	18.798	383.482	4.714	35.496	132.793	2.725	22.468	121.266	0.006	21.431	0.296	0.083	32.183	2.571
40	7.340	33.387	219.847	4.785	20.610	232.188	2.655	20.941	126.772	0.005	24.583	0.206	0.104	35.525	2.917
41	7.109	24.095	295.021	4.704	20.113	233.872	2.302	11.222	205.098	0.005	32.080	0.147	0.119	43.854	2.711
42	7.387	18.100	408.122	4.687	24.060	194.785	2.914	24.806	117.487	0.008	25.941	0.317			
43	7.289	23.580	309.134	4.640	25.213	184.038	2.593	9.686	267.647	0.006	21.546	0.271			
44	7.449	23.594	315.710	4.742	21.569	219.845	2.688	13.450	199.831	0.008	26.513	0.287			
45	7.194	24.031	299.369	4.927	23.751	207.428	2.851	20.769	137.247	0.007	25.414	0.294			
46	7.415	24.471	303.011	4.827	19.939	242.077	2.750	24.303	113.147	0.007	31.282	0.227			
47	7.186	39.208	183.277	4.727	19.849	238.153				0.007	20.579	0.330			

Resistant

	Acetate			**Butyrate**			**Heptanoate**			**Palmitate**			**Oleate**		
N	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**	**A**	**P**	**SA**

1	7.278	8.588	847.538	4.906	21.755	225.500	0.628	12.074	52.019	0.064	41.804	1.540	0.050	9.359	5.295
2	7.619	30.939	246.266	4.727	27.740	170.407	0.612	13.311	45.980	0.054	29.904	1.801	0.056	11.557	4.849
3	7.151	16.669	429.033	4.594	25.625	179.277	0.638	17.284	36.923	0.072	30.753	2.336	0.062	33.250	1.855
4	7.691	22.393	343.465	4.590	15.094	304.072	0.613	12.588	48.725	0.054	12.594	4.302	0.050	27.667	1.806
5	7.563	23.790	317.917	4.907	22.989	213.469	0.585	14.580	40.107	0.051	27.894	1.834	0.035	10.556	3.327
6	7.736	11.119	695.690	4.731	32.112	147.342	0.573	13.061	43.884	0.053	21.521	2.451	0.050	25.615	1.935
7	7.115	21.897	324.913	4.931	17.108	288.223	0.591	32.122	18.402	0.057	27.952	2.028	0.046	22.566	2.031
8	7.372	35.689	206.568	4.961	23.284	213.075	0.601	11.245	53.459	0.094	18.352	5.101	0.062	14.828	4.195
9	5.921	19.981	296.321	4.751	21.343	222.582	0.561	21.315	26.300	0.061	17.130	3.572	0.041	25.341	1.637
10	7.090	8.332	850.932	5.104	26.789	190.534	0.580	14.230	40.737	0.022	24.962	0.895	0.046	37.791	1.209
11	7.404	30.912	239.515	4.783	21.738	220.054	0.561	17.302	32.398	0.020	18.836	1.039	0.065	31.311	2.074
12	7.035	26.477	265.720	4.889	20.510	238.380	0.577	25.757	22.394	0.018	23.892	0.744	0.053	10.046	5.286
13	5.678	13.469	421.583	4.452	31.079	143.237	3.174	23.408	135.597	0.020	26.394	0.769	0.017	11.434	1.521
14	5.777	38.866	148.631	2.991	23.975	124.757	3.038	13.748	220.960	0.019	21.084	0.923	0.023	2.764	8.435
15	6.178	24.481	252.363	4.013	20.972	191.370	2.918	19.514	149.523	0.020	30.356	0.645	0.036	3.348	10.659
16	6.213	24.406	254.561	4.005	25.060	159.831	3.301	22.292	148.068	0.020	25.593	0.765	0.052	4.773	10.860
17	9.938	27.937	355.733	3.844	21.080	182.335	3.295	16.709	197.183	0.020	15.069	1.351	0.017	14.066	1.227
18	5.847	54.378	107.522	3.745	15.992	234.206	3.406	22.593	150.772	0.018	22.195	0.801	0.019	3.409	5.706
19	6.307	47.136	133.796	3.485	20.569	169.430	2.961	24.008	123.346	0.019	22.774	0.816	0.015	6.306	2.360
20	5.900	16.087	366.785	3.506	20.266	172.996	2.898	10.528	275.239	0.019	19.511	0.973	0.031	4.377	7.135
21	5.746	28.514	201.527	3.306	23.967	137.937	2.123	25.470	83.350	0.019	8.869	2.160	0.008	1.285	6.348
22	5.610	16.359	342.930	4.075	17.727	229.882	3.228	17.622	183.175	0.010	21.407	0.479	0.025	2.887	8.576
23	5.877	38.845	151.296	3.948	15.371	256.838	5.256	19.197	273.798	0.008	34.467	0.241	0.007	22.133	0.726
24	5.782	15.856	364.672	3.799	12.478	304.421	3.139	12.791	245.414	0.010	23.879	0.408	0.016	30.152	0.649
25	7.210	18.453	390.744	4.835	23.159	208.788	3.271	29.570	110.625	0.009	27.480	0.318	0.020	35.476	0.744
26	7.318	15.813	462.799	4.503	16.991	264.997	2.794	16.680	167.482	0.011	30.793	0.342	0.026	29.158	0.722
27	8.012	23.571	339.893	4.979	10.907	456.488	3.196	24.422	130.868	0.010	35.362	0.273	0.021	28.053	0.992
28	7.570	38.000	199.216	5.118	23.928	213.893	3.251	31.791	102.261	0.009	24.816	0.367	0.028	22.243	0.709

29	7.185	28.490	252.204	4.772	17.862	267.153	2.654	17.233	154.020	0.009	21.736	0.407	0.016	45.673	0.488
30	6.872	18.299	375.517	4.840	27.455	176.273	2.688	17.220	156.074	0.010	21.401	0.457	0.022	23.080	0.621
31	7.160	17.149	417.526	4.937	21.864	225.794	2.587	9.495	272.508	0.010	25.396	0.385	0.014	15.399	0.520
32	7.247	21.456	337.747	4.771	11.919	400.319	2.596	11.530	225.179	0.010	30.331	0.330	0.008	30.150	1.124
33	7.301	28.827	253.267	4.861	20.414	238.132	2.920	15.979	182.760	0.009	21.521	0.409	0.034	35.448	0.824
34	7.494	10.939	685.082	4.974	20.218	246.032	3.350	25.518	131.274	0.011	25.442	0.418	0.029	17.977	0.711
35	7.433	27.476	270.514	5.333	53.194	100.252	3.032	23.249	130.412	0.006	18.580	0.348	0.013	17.943	1.729
36	7.015	9.762	718.649	5.136	43.462	118.166	2.744	22.461	122.188	0.007	22.665	0.308	0.031	20.798	3.554
37	6.771	29.343	230.774	4.945	31.473	157.127	2.520	26.579	94.815	0.007	22.369	0.319	0.074	28.898	1.712
38	6.952	23.243	299.115	4.752	35.780	132.801	3.092	31.861	97.047	0.007	18.765	0.385	0.049	15.655	2.308
39	7.273	24.951	291.470	4.840	33.239	145.629	2.871	26.709	107.476	0.008	31.320	0.244	0.036	26.669	1.728
40	6.792	35.153	193.202	4.778	25.925	184.285	2.902	32.742	88.637	0.006	33.922	0.163	0.046	20.934	2.581
41	6.848	33.445	204.748	4.934	25.699	191.976	2.825	36.448	77.519	0.007	30.829	0.234	0.054	24.552	2.827
42	7.050	40.153	175.586	4.805	28.007	171.562	2.894	34.030	85.040	0.008	33.350	0.232	0.069	22.695	4.867
43	7.009	26.717	262.357	5.375	26.888	199.922	2.587	21.465	120.543	0.007	35.490	0.194	0.110	24.728	3.543
44	7.487	27.229	274.967	5.060	32.937	153.642	2.795	27.779	100.625	0.008	23.921	0.333	0.088	24.084	3.730
45	7.060	23.266	303.454	4.840	27.840	173.844	2.895	31.128	92.998	0.008	28.143	0.283	0.090	24.220	2.368
46	7.196	23.845	301.764	4.936	29.736	165.989	2.528	22.760	111.053				0.057	18.820	3.128
47	6.911	29.267	236.150	5.210	27.721	187.940	2.758	30.170	91.425						
48	6.960	25.639	271.456	4.865	23.908	203.498	2.386	11.337	210.426						